

(19) World Intellectual Property
Organization
International Bureau



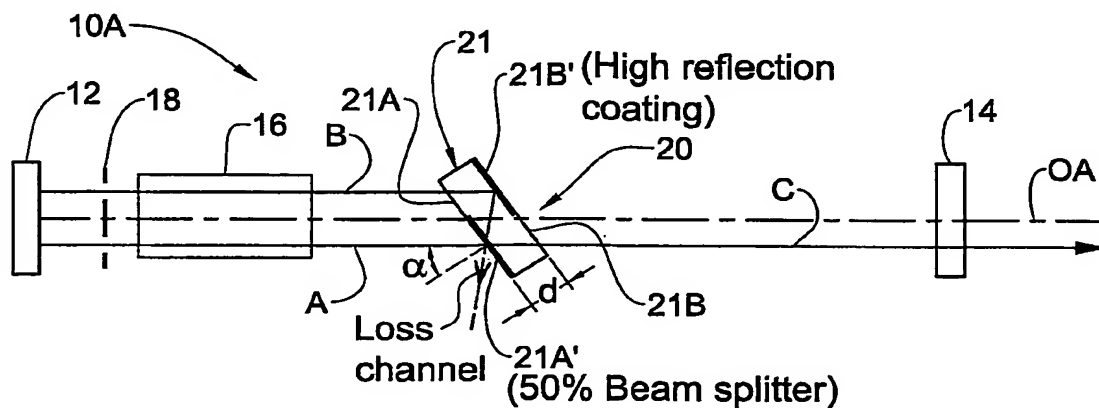
(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/060052 A2

- (51) International Patent Classification⁷: **H01S** (74) Agent: REINHOLD COHN AND PARTNERS; P.O.B. 4060, 61040 Tel Aviv (IL).
- (21) International Application Number: PCT/IL2004/001141 (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 16 December 2004 (16.12.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/530,259 18 December 2003 (18.12.2003) US (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (for all designated States except US): YEDA RESEARCH AND DEVELOPMENT COMPANY LTD. [IL/IL]; At The Weizmann Institute of Science, P.O.Box 95, 76100 Rehovot (IL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): ISHAAYA, Amiel, A. [IL/IL]; 23/15 Meir Herman Street, 74014 Nes Ziona (IL). DAVIDSON, Nir [IL/IL]; 29 Bernstein Street, 75503 Rishon Le Zion (IL). FRIESEM, Asher, A. [US/IL]; 15 Neveh Matz, Weizmann Institute of Science, 76100 Rehovot (IL). SHIMSHI, Liran [IL/IL]; 4/b Hamaayan Street, 53376 Givatayim (IL).
- Published:
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: RESONATOR CAVITY CONFIGURATION AND METHOD



(57) Abstract: A resonator cavity and method and presented. The resonator cavity comprises at least one gain medium and end reflectors which define together longitudinal modes of light in the cavity, and further comprises an intra-cavity beam coupler assembly. The beam coupler assembly is configured to split light impinging thereon into a predetermined number of spatially separated light channels, and to cause phase locking and at least partial coherent combining of the light channels, having common longitudinal and transverse modes, in a double pass through the beam coupler assembly. The resonator cavity is configured and operable to produce at least one output combined light channel of a predetermined intensity profile.